

Appl. No. 10/613,969

REMARKS

This is in response to the Office Action of 02 June 2005. Claims 1-6, 8 and 11 are pending in the application, Claims 7, 9-10 and 12-22 are withdrawn from consideration, and Claims 1-6, 8 and 11 have been rejected.

By this Response and Amendment, Claims 1-2 have been amended; and Claims 5-6 have been cancelled without prejudice or disclaimer.

No new matter has been added.

In view of the amendments above and remarks below, Applicants respectfully request reconsideration and further examination.

About The Invention

The present invention relates generally to methods and apparatus for at least partially compensating for manufacturing and/or operational variations that affect performance of an integrated circuit by determining the magnitude of these variations and providing one or more corresponding control signals to a voltage regulator, which, responsive thereto, increases or decreases the magnitude of the output voltage. The output voltage of the voltage regulator is typically provided to a power supply node of the IC. Similarly, the output of the voltage regulator may be provided to a substrate portion of the IC, so as to provide a substrate bias that is variable in response to changes in the performance of the IC. In various embodiments, a determination of the magnitude of the variations is made by comparing the performance of a digital delay circuit or a ring oscillator to a reference clock; speed characterization of the IC may be obtained from the voltage regulator control signals; and information regarding reliability degradation of the IC may be obtained from the control signals that are generated for control of the voltage regulation circuitry.

Objections to the Drawings

The Examiner has objected to the drawings because a package that houses the integrated circuit is not shown.

By this response, Claim 6, which refers to a package that houses the integrated

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circuit has been cancelled without prejudice or disclaimer. In view of this amendment, the objection to the drawings has been rendered moot.

Non-narrowing Amendment to Claim 2

Claim 2 has been amended in a non-narrowing manner to correct a grammatical error. More particularly, "a inverter" has been amended to read "an inverter". No change in scope is intended by this amendment

Rejections under 35 USC §102(e)

Claims 1-6 and 8 have been rejected under 35 USC §102(e) as being anticipated by Sumiyoshi (US Published Application 2002/0101947).

Claims 5-6 have been cancelled without prejudice or disclaimer, thereby rendering the rejection of these Claims moot.

Independent Claim 1 has been amended to recite that the regulated power supply is disposed external to the integrated circuit; the integrated circuit includes circuitry, disposed in the integrated circuit, in addition to the first and second circuits; and the output terminal of the regulated power supply is further coupled to supply power to the additional circuitry. Support for these amendments can be found in the specification at pages 8-10 and in Figs. 2 and 4.

Applicant respectfully submits that the limitations of amended independent Claim 1 are not disclosed, suggested or motivated by Sumiyoshi. More particularly, Sumiyoshi does not show a regulated power supply that is disposed external to the integrated circuit. Notwithstanding the Examiner's characterization of Sumiyoshi's circuits (9) on the computer side as being components of the regulated power supply, they are clearly not part of the regulated power supply. In fact, circuits (9) are simply a buffer circuit for the RGB and clock signals being transmitted from the computer.

Additionally, Sumiyoshi's inverter string is powered by Vs, the output of the alleged regulated power supply, and not from Vdd, which appears to be the power supply for the rest of the integrated circuit. The invention defined by Applicant's

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amended Claims clearly requires the regulated power supply to be coupled to both the first circuit and the additional circuitry disposed in the integrated circuit. This is different from the circuits disclosed by Sumiyoshi. Applicant's claimed invention advantageously partitions the sensor circuitry (e.g., inverter string) from the externally disposed regulated power supply. Sumiyoshi does not appear to disclose, suggest, or provide motivation for the claimed invention.

In view of the foregoing, Applicant respectfully submits that rejection of independent Claim 1 has been overcome. Applicant further submits that rejections of Claims 2-4, 8 and 11 have similarly been overcome.

Rejections under 35 USC §103(a)

Claim 11 has been rejected under 35 USC §103(a) as being unpatentable over Sumiyoshi in view of Lee (US Patent 6,177,785).

As described in detail above, independent Claim 1, from which Claim 11 depends, has been amended to recite limitations which distinguish the claimed invention from the disclosure of Sumiyoshi. In view of these amendments, Applicant respectfully submits that the rejection of Claim 11 has been overcome.

Conclusion

All of the objections and rejections in the outstanding Office Action of 02 June 2005 have been responded to, and Applicant respectfully submits that the pending Claims 1-4, 8 and 11 are now in condition for allowance.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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